UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/743,516	01/31/2001	Martin Braddock	1430-261	4022

7590 01/18/2002

Nixon & Vanderhye
8th Floor
1100 North Glebe Road
Arlington, VA 22201-4714

EXAMINER	
PRIEBE, SCOTT DAVID	

ART UNIT	PAPER NUMBER
1632	6

DATE MAILED: 01/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/743,516	Applicant(s) BRADDOCK ET AL.	
	Examiner Scott Priebe	Art Unit 1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If the period for reply specified above is the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *17-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *1* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The amendment filed 1/31/01 has been entered. Claims 3-8, 12, 13, 19 and 20 have been amended.

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in response to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-16, drawn to a nucleic acid encoding nab1 or nab2 and use of same in manufacture of a gene therapeutic or in gene therapy.

Group II, claim(s) 17-22, drawn to use of nab1 or nab2 protein in therapy.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The invention of groups I and II use nucleic acid and protein, respectively, both of which as admitted in the specification were known in the art. In addition, proteins and nucleic acid encoding them are different compounds with different functions and biological properties.

During a telephone conversation with Gary on 1/11/02 a provisional election was made with traverse to prosecute the invention of group I, claims 1-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

Specification

Content of Specification

The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to the drawings, each of the lettered items should appear in upper case, without underlining or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) Title of the Invention.
(b) Cross-References to Related Applications.
(c) Statement Regarding Federally Sponsored Research or Development.

(d) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on a compact disc (see 37 CFR 1.52(e)(5)).

(e) Background of the Invention.

1. Field of the Invention.
2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) Brief Summary of the Invention.

(g) Brief Description of the Several Views of the Drawing(s).

(h) Detailed Description of the Invention.

(I) Claim or Claims (commencing on a separate sheet).

(j) Abstract of the Disclosure (commencing on a separate sheet).

(k) Drawings.

(l) Sequence Listing (see 37 CFR 1.821-1.825).

(a) Title of the Invention: See 37 CFR 1.72(a)and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive, preferably from two to seven words and may not contain more than 500 characters.

(b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

(c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.

(d) Reference to a "Microfiche Appendix": See 37 CFR 1.96(c) and MPEP § 608.05, if the application was filed before March 1, 2001. The total number of microfiche and the total number frames should be specified. Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc and an incorporation by reference of the material on the compact disc.

(e) Background of the Invention: See MPEP § 608.01(c. The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

(2) Description of the Related Art: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. This item may also be titled "Best Mode for Carrying Out the Invention." Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(I) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet. (37 CFR 1.52(b)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP 608.01(I)- (p).

(j) Abstract of the Disclosure: A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less on a separate sheet following the claims.

(k) Drawings: See 37 CFR 1.81, 1.83-1.85, and MPEP § 608.02.

(l) Sequence Listing, if on paper: See 37 CFR 1.821-1.825.

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

The disclosure is objected to because of the following informalities: The description of the drawings refers to Figure 2 and Figure 3. However, the corresponding figures are labeled as Figures 2a and 3a.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for

example *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1-13 are directed to the preparation of a mendicament containing nucleic acid for the treatment of a cell proliferative disorder associated with wound healing, claim 14 is directed to a nucleic acid molecule for gene therapy, claim 15 is directed to a pharmaceutical composition, and claim 16 is directed to a method of treatment of a cell proliferative disorder associated with wound healing. Claims 1-15 are thus limited in their ultimate use to gene therapy, e.g. the method of claim 16, and the specification must enable the use of the claimed products for gene therapy.

Orkin et al. reviews the infant state of the art of gene therapy before the instant invention was made. The overall conclusions were: 1) gene therapy for each disease would present its own

scientific and clinical challenges; 2) no successful gene therapy protocol was known; 3) significant problems remained in all aspects of gene therapy, especially with respect to effective expression vectors; 4) the pathophysiology of diseases to be treated were poorly understood; 5) one cannot predictably extrapolate the result of one animal model, such as mouse, to treatment of a disease in a different animal, such as human; 6) assessment of known gene therapy protocols was hindered by poor gene transfer, reliance on qualitative, rather than quantitative assessments of gene transfer, lack of suitable controls and poor definition of biochemical or disease endpoints; and 7) that gene therapy has been oversold, and the impression that gene therapy is successful is mistaken (pages 1-2). Thus, gene therapy as a whole is highly unpredictable, i.e. one cannot extrapolate from one specific successful example what will be successful in a different gene therapy application. Of particular importance to the instant invention is that pathophysiology of scar formation in wound healing is poorly understood, and that difficulties were known and unsolved. The instant specification either does not mention some of these issues or does not present guidance for overcoming them.

The specification provides little guidance on how to actually practice the invention. Rather the specification simply lists various nucleic acids, and prior art vectors and carriers that could be used, without teaching how each is appropriately used. It makes general statements on prior methods for delivering the compositions, but provides no guidance on the specifics of where the compositions should be delivered relative to the wound site, when the compositions should be delivered relative to when the wound was made, and how much nucleic acid should be

delivered or how much NAB protein should be expressed to achieve a therapeutic endpoint. The specification presents a few working examples, but for reasons discussed below, the results add to the unpredictability of the method, rather than demonstrating how to carry out the method.

EGR1 is known to be a transcription factor which is expressed at a basal level normally, and transiently at higher levels very early in wound formation. In response to wounding, EGR1 activates expression of various growth factors either directly, e.g. PDGF, HGF or TGFβ1, or indirectly, e.g. VEGF. A key feature of EGR-1 mediated processes in wound healing is that the increased expression is transient, peaking between 30 min and 1 hour post-injury and decreasing rapidly after 4 hours (Khachigian et al., Science 271: 1427-1431, 1996, at page 1427, col. 1; Miano et al., Am. J. Pathol. 155 (4): 1009-1012, Oct. 1999, at page 1009, col. 2). According to the specification at page 3 (only full para.), the goal of the therapy is to reduce scar tissue formation by reducing, but not eliminating, the expression of growth factors such as TGFβ, PDGF, and VEGF which all promote normal wound healing, but may lead to scarring. For example, TGFβ1 has been implicated in scar formation. This is to be accomplished by providing a nucleic acid which encodes and expresses NAB1 or NAB2, which suppress EGR1 mediated transcription, and possibly including EGR1 expression itself. NAB2 expression, but not NAB1, is induced by the same stimuli as Egr1 expression, but increases after the expression of Egr1 increases (Miano et al., page 1010, col. 2).

The specification suggests that treatment with NAB1 or NAB2 nucleic acid would be beneficial by causing a reduction in TGFβ1 levels resulting from Egr1 transcriptional activation,

citing Shah et al. (J. Cell Sci. 107: 1137-1157, 1994). However, Shah et al. discloses that treatment with anti-TGFβ1,2 antibodies only led to a beneficial result when the treatment was performed very early after wound formation, with the best results obtained when the treatment was immediate. The crucial events that commit the response to its endpoint appear to occur immediately following injury. Shah et al. stresses that it is crucial to effect the cytokine profile at the right time in order to influence the final outcome, and that the therapeutic window is narrow. As indicated above, increased EGR1 expression appears to last only hours after an injury, suggesting that for transfection of NAB1 or NAB2 to have any effect at all, it would have to be carried out such that the NAB protein is expressed at therapeutic levels within less than a few hours of wound formation or before the wound is made (as was done in instant Example 4). The specification does not address the timing of the treatment relative to wound formation or the time required for expression of transfected NAB nucleic acid to achieve therapeutic levels of NAB protein.

Also, expression of exogenous NAB2 not only reduced expression of cytokines induced by exogenous EGR1 but also the basal level of cytokine production. If these *in vitro* results are relevant to *in vivo*, then they suggest that the amount of exogenous NAB expression would be critical to the therapeutic outcome. Qu et al. (J. Cell Biol. 142 (4): 1075-1082, Aug. 1998, at page 1082, col. 1) taught that the Egr1/NAB2 ratio is critical in determining the outcome of an Egr1/NAB2 regulated process in neuronal differentiation, and taught that the ratio likely would be critical to the outcome of other Egr1/NAB2 regulated processes. The importance in wound

healing of normal increased expression of Egr1 and consequent expression of cytokines in response to a wound would suggest that blockage and further reduction of Egr1 mediated processes to below basal levels would at best not provide any benefit, and at worst may detrimentally impair the healing process. Again, the specification teaches (page 3), the goal of the therapy is to reduce scar tissue formation by reducing, but not eliminating, the Egr1 mediated expression of growth factors. Neither the instant specification nor the prior art address the implications of reducing Egr1-mediated transcription and cytokine production to levels below that of undamaged tissue. The specification provides no guidance on the amount of exogenous NAB expression that would produce a beneficial, rather than a detrimental, effect nor on the amount of exogenous NAB nucleic acid required to produce a beneficial result. There is no evidence of record that one skilled in the art would be able to fine tune the expression of an exogenous nucleic acid *in vivo* during gene therapy , *i.e.* to produce enough transgene expression, but not too much.

Example 4 is the only working example presented in the specification which involves a mammal. The specification reports results regarding healing rate, cytokine profile, and angiogenesis. Treatment with NAB2 nucleic acid had no effect on healing rate, and in contrast to the *in vitro* examples, had no effect on PDGF levels or EGR1 levels. Little if any *significant* change in TGFβ1 levels was observed relative to untreated controls (the error bars overlap substantially). The only significant change observed was an increased TGFβ3 level. The specification states that angiogenesis was blocked with NAB nucleic acid treatment, however,

angiogenesis was higher than in the unmanipulated control. Notable by its absence is any assessment of effect on scar formation, to which Example 4 is presented as being directed and to which the claimed invention is directed.

It is unclear how this example applies to a real-life situation since the NAB2 nucleic acid was administered 24 hours before the wound was made. It is unclear how the results could be extrapolated given the importance of timing evident from the prior art as discussed above. In this case, transfected cells presumably are already expressing NAB2 before being exposed to any stimulus that would increase EGR1 expression and subsequent EGR1-mediated expression. The prior art would suggest that treatment any later than immediately following wound formation would have little or no beneficial effect. The importance of the timing or therapeutic window is not addressed in the specification, nor are the claims limited to any particular time frame or therapeutic window relative to the time of wound formation.

In addition, the wounds were made at the sites of transfection in the skin, and do not provide any information on any other mode or site of transfection relative to the wound location. Given that it was known in the art that increased EGR1 mediated expression of cytokines occurs on the periphery of the wound, it would appear that transfecting cells anywhere but at the wound site would have no effect. The claims are not limited to the location of transfection relative to the wound, and the only guidance in the specification is implicitly provided by Example 4. It is unclear if applicant appreciated the importance of where the nucleic acid molecule should be administered.

In view of the undeveloped state of the art of gene therapy and the limited understanding of Egr1 mediated events in wound healing, the resulting unpredictability, and the limited guidance in the specification for carrying out the invention, particularly with respect to unsolved problems associated with the difficulties arising from the narrow therapeutic windows for timing of treatment and dose, it would require undue experimentation to reduce the claimed invention to practice with respect to the recited goal of the invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-13 provide for the use of a nucleic acid molecule, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Regarding claims 1-13 and 16 which recite "a mammal, including human" , the term "including" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 and 11-15 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Russo et al., Proc. Natl. Acad. Sci. USA 92: 6873-6877, July 1995.

Russo et al. disclose a mammalian expression vector comprising a coding sequence for the mouse NAB1 protein operatively linked to a CMV promoter and a process for making it (page 6873, col. 1; page 6875, Fig. 2 & col. 1). The recitation of intended use of the nucleic acid and composition comprising it do not distinguish the claimed products over the prior art products, which were used for transfecting cultured mammalian cells.

Claims 1-9 and 11-15 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Svaren et al., Mol. Cell. Biol. 16 (7): 6545-6553, July 1996.

Svaren et al. disclose a mammalian expression vector comprising a coding sequence for the mouse or human NAB2 proteins operatively linked to a CMV promoter and a process for making them (page 3546, Fig. 1 & col. 1; page 3549, col. 1). Svaren et al. also discloses the nucleotide sequences and amino acid sequences for mouse and human NAB1 and NAB2 by

reference to their respective GenBank Accession numbers (page 3547, col. 2). The recitation of intended use of the nucleic acid and composition comprising it do not distinguish the claimed products over the prior art products, which were used for transfecting cultured mammalian cells.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Russo et al. or Svaren et al. as applied to claims 1-9 and 11-15 above, and further in view of Sanford et al. US 5,036,006.

Russo et al. and Svaren et al. have been described. Neither discloses immobilizing the nucleic acid onto gold particles.

However, Sanford et al. disclosed a method for introducing biological molecules, such as nucleic acid, into cells by immobilizing the molecules onto gold particles and then bombarding the target cells with the particles. This method was widely known ans used for transfection of cells *in vitro* at the time the invention was made.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used particle bombardment with gold particles comprising the expression vector of either Russo et al. or Svaren et al. to transfect the cells since this was an accepted prior art transfection method.

Certain papers related to this application may be submitted to Art Unit 1632 by facsimile transmission. The FAX numbers are (703) 308-4242 or (703) 305-3014 for any type of communication. In addition, FAX numbers for a computer server system using RightFAX are also available for communications before final rejection, (703) 872-9306, and for communications after final rejection, (703) 872-9307, which will generate a return receipt. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant *does* submit a paper by FAX, the original copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott D. Priebe whose telephone number is (703) 308-7310. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Deborah Clark, can be reached on (703) 305-4051.

Any inquiry concerning administrative, procedural or formal matters relating to this application should be directed to Patent Analyst Patsy Zimmerman whose telephone number is

(703) 308-8338. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Scott D. Priebe, Ph.D.
Primary Examiner
Technology Center 1600
Art Unit 1632